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EXAMINER	
NGUYEN, PHUONGCHAU BA	

ART UNIT	PAPER NUMBER
2665	34

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/174,002	BOCH ET AL.	
	Examiner	Art Unit	
	Phuongchau Ba Nguyen	2665	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10-21-03 amendment* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *26-45 and 48* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *26-45 and 48* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

15)☒ Notice of References Cited (PTO-892)
16)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
17)☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
18)☐ Interview Summary (PTO-413) Paper No(s). _____ .
19)☐ Notice of Informal Patent Application (PTO-152)
20)☐ Other: .

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 26-27, 34, 42, 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cowan (6,031,830) in view Brody (6,278,697), and further in view of Frank (5,914,948).

Regarding claims 26-27, 34, and 42:

Cowan (6,031,830) discloses a base station 28 in a cell 34 of a cellular, wireless communications network (figure 1)

for providing wireless, bi-directional communication with network interface units (NIUs) (mobile terminal 36) within the cell 34, and for providing a point to point inter-cell radio link (RF) with a base station 26 in a neighboring

cell 34 (fig.1) and the base station having a second interface card for providing the point to point radio inter-cell link (fig.1).

Cowan does not explicitly disclose the base station having an asynchronous transfer mode (ATM) multi-services switch equipped with a first radio interface card for providing the wireless, bi-directional communication between the base station and the NIUs, said radio interference cards being, selectively, one of the following: frequency division multiple access (FDMA) or time division multiple access (TDMA). However, in the same field of endeavor, Brody (6,278,697) discloses the base station 28 having an asynchronous transfer mode (ATM) multi-services switch (154, fig.2) equipped with a first radio interface card (TDMA 180 or GSM 184) for providing the wireless, bi-directional communication between the base station 152 and the NIUs (34, 52, 54), said radio interference cards being, selectively, one of the following: frequency division multiple access (FDMA) or time division multiple access (TDMA) (GSM 184). Therefore, it would have been obvious to an artisan to apply Brody's teaching into Cowan's base station and the motivation being to

provide controlling of which interface protocol should be used to receiving/transmitting data between base station 152 and users (34, 52, 54).

Cowan and Brody do not explicitly disclose that the NIU at customer sites having a highly directional antenna. However, in the same field of endeavor, Frank (5,914,948) discloses that the mobile station MS is linked with one of the base stations BS via a directional antenna {col.3, lines 11-13, 31-32}. Therefore, it would have been obvious to an artisan to apply Frank's teaching into Cowan's system with the motivation being to extend the radio link between the base station and the mobile station and to be able to connect simultaneously during the handoff to both base stations (one base station to the next base station) for a minimum period to compensate different propagation delays

Regarding claim 45:

Cowan discloses a scaleable, broadband wireless system for providing radio access to a metropolitan area comprising a plurality of overlapping cell

areas (34), each cell area 34 having a base station (28 or 26) and a plurality of fixed user sites 36 having network interface units (NIUs) within each cell area.

Cowan does not explicitly disclose the claimed features. However, in the same field of endeavor, Brody discloses ATM radio interface cards (ARICs) 168&180, 172& 184 in each base station 152 for implementing wireless, bi-directional communication between said base stations 152 and user sites 34 (fig.1), each said ARICs being adapted to operate selectively on frequency division multiple access (FDMA) protocol, or two time division multiple access (TDMA) protocol (fig.2); an ATM backplane (communication switch 154) at one of said base stations constituted by a plurality of ARICs, each base station ARICs being provided with implementing protocols for bi-directionally linking with the ATM backplane, said ARICs being adapted to operate on a multiple access protocol so as to provide point-to-point radio access between base stations over intercell links, and whereby the system can be scaled by adding ARICs 170&182,to said ATM backplane as required to meet demand.

Therefore, it would have been obvious to an artisan to apply Brody's teaching into Cowan's base station and the motivation being to provide

controlling of which interface protocol should be used to receiving/transmitting data between base station 152 and users (34, 52, 54).

3. Claims 28-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cowan, Brody and Frank as applied to claim 27 above, and further in view of Raychaudhuri (5,638,371) and Jaisingh (6,009,096).

Regarding claims 28-29:

-Cowan does not disclose that the base station 28 is connecting to an ATM network (claims 28-29, 32). Cowan further discloses one of the base stations is connected to the network manager (30) via other base station 26. However, in the same field of endeavor, Raychaudhuri (5,638,371) discloses base station 38 (fig.2) connected to ATM network 44. Therefore, it would have been obvious to an artisan to apply Raychaudhuri's teaching into Cowan's system and the motivation being to provide multi-services wireless network including ease of interfacing with wired B-ISDN system.

-Cowan does not explicitly disclose that radio inter-cell link is in a ring configuration (claim 32). However, in the same field of endeavor, Jaisingh

(6,009,096) discloses a sonet ring 208 [ring configuration as claimed] in figure 2A for joining together a plurality of access nodes 204-1, 204-2...204-5 {see figure 2A}. Therefore, it would have been obvious to an artisan to apply Jaisingh's teaching to Cowan's system and the motivation being to help isolate the broken ring/connection between nodes by re-creating a new connection, thus give the ring network great flexibility, reliability, and ease of configuration and maintenance.

4. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cowan, Brody and Frank as applied to claim 27 above, and further in view of Acompora (6,049,593).

Cowan does not disclose that radio inter-cell link is in a mesh configuration. However, in the same field of endeavor, Acompora discloses a mesh network 100 in figure 2. Therefore, it would have been obvious to an artisan to apply Acompora's teaching to Cowan's system and the motivation being to provide efficient alternative transmission link of high quality incase the primary path between two sites (base stations) were congested or in a state of failure.

5. Claims 30-31, 35, 39, 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cowan, Brody and Frank as applied to claim 26 above, and further in view of Smith (5,432,780).

Regarding claims 30-31, 35, 39, 43:

-As claims 30-31, 35, 43, Cowan does not explicitly disclose the claimed features. However in the same field of endeavor, Smith discloses a five channel combiners 282, representative of the combiner 455 or 475 of figures 4A & 4B, connected to antenna sector X {see fig. 4C}. Therefore, it would have been obvious to an artisan to Smith's teaching to Cowan's base station and the

motivation being to prevent interference between each sectors and to reduce the disadvantages caused by a fading signal.

-As claim 39, Cowan further discloses a base station 28 providing a point to point inter-cell radio link (RF) with a base station 26 in a neighboring cell 34 (fig.1).

6. Claims 36-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cowan, Brody, Frank and Smith as applied to claim 35 above, and further in view of Raychaudhuri (5,638,371).

Cowan further discloses one of the base stations is connected to the network manager 30 **(claim 37)** via other base station 26. Cowan does not disclose that the base station 28 is connecting to an ATM network **(claim 36)**. However, in the same field of endeavor, Raychaudhuri (5,638,371) discloses base station 38 (fig.2) connected to ATM network 44. Therefore, it would have been obvious to an artisan to apply Raychaudhuri's teaching into Cowan's system and the motivation being to provide multi-services wireless network including ease of interfacing with wired B-ISDN system.

7. Claim 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cowan, Brody, Frank, Smith, Raychaudhuri as applied to claims 36-37 above, and further in view of Vary (IEEE 1989, Implementation aspects of the Pan European Digital Mobile Radio System).

Cowan does not explicitly disclose the claimed features. However, in the same field of endeavor, Vary discloses that one of said base stations includes said ATM backplane and a network manager (122; fig.5) for configuring the operating frequencies, establishing modulation rate and establishing a selected forward error correction (FEC) value and setting the transmission power levels for the users thereof {Vary, pages 4-17 to 4-21, sections 2-4.3}. Therefore, it would have been obvious to a skilled artisan to apply Vary's teaching to Cowan's system and the motivation being to improve transmission quality, secure speech transmission (by encryption), frequency economy, modularity of the radio network and cost reduction {Vary, page 4-21, section 5}.

8. Claim 40 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cowan, Brody, Frank, Smith as applied to claim 39 above, and further in view of Jaisingh (6,009,096).

Cowan does not explicitly disclose that radio inter-cell link is in a ring configuration. However, in the same field of endeavor, Jaisingh (6,009,096) discloses a sonet ring 208 [ring configuration as claimed] in figure 2A for joining together a plurality of access nodes 204-1, 204-2...204-5 {see figure 2A}. Therefore, it would have been obvious to an artisan to apply Jaisingh's teaching to Cowan's system and the motivation being to help isolate the broken ring/connection between nodes by re-creating a new connection, thus give the ring network great flexibility, reliability, and ease of configuration and maintenance.

9. Claim 41 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cowan, Brody, Frank, Smith and Jaisingh as applied to claim 39 above, and further in view of Acompora (6,049,593).

Cowan does not disclose that radio inter-cell link is in a mesh configuration. However, in the same field of endeavor, Acompora discloses a mesh network 100 in figure 2. Therefore, it would have been obvious to an artisan to apply Acompora's teaching to Cowan's system and the motivation being to provide efficient alternative transmission link of high quality incase the primary path between two sites (base stations) were congested or in a state of failure.

10. Claim 44 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cowan, Brody, Smith as applied to claim 39 above, and further in view of Vary (IEEE 1989, Implementation aspects of the Pan European Digital Mobile Radio System).

Cowan does not explicitly disclose the claimed features. However, in the same field of endeavor, Vary discloses that one of said base stations includes said ATM backplane and a network manager (122; fig.5) for configuring the operating frequencies, establishing modulation rate and establishing a selected forward error correction (FEC) value and setting the transmission power levels

for the users thereof {Vary, pages 4-17 to 4-21, sections 2-4.3}. Therefore, it would have been obvious to a skilled artisan to apply Vary's teaching to Cowan's system and the motivation being to improve transmission quality, secure speech transmission (by encryption), frequency economy, modularity of the radio network and cost reduction {Vary, page 4-21, section 5}.

11. Claim 48 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cowan, Brody as applied to claim 45 above, and further in view of Vary (IEEE 1989, Implementation aspects of the Pan European Digital Mobile Radio System).

Cowan does not explicitly disclose the claimed features. However, in the same field of endeavor, Vary discloses that one of said base stations includes said ATM backplane and a network manager (122; fig.5) for configuring the operating frequencies, establishing modulation rate and establishing a selected forward error correction (FEC) value and setting the transmission power levels for the users thereof {Vary, pages 4-17 to 4-21, sections 2-4.3}. Therefore, it would have been obvious to a skilled artisan to apply Vary's teaching to

Cowan's system and the motivation being to improve transmission quality, secure speech transmission (by encryption), frequency economy, modularity of the radio network and cost reduction {Vary, page 4-21, section 5}.

Response to Arguments

12. Applicant's arguments filed 10-3-03 have been fully considered but they are not persuasive.

A/. Applicant request clarification to claim 32 wherein Raychaudhuri being used for rejection. Also, applicant argued that Cowan, Brody, Frank, Raychaudhuri, and Jaisingh do not disclose the ring features as claimed wherein in one of the base station is connected to said ATM network and the network manager, and each of said other base stations is in bi-directional communication with said one base station over inter-cell links.

In reply, first, applicant is directed to the rejection in this office action to claim 32, wherein Raychaudhuri being applied to Cowan's system wherein base station is connected to ATM network thus providing multi-services wireless network including ease of interfacing with wired B-ISDN system. Further,

Cowan's system (which was modified from Brody, Frank and Raychaudhuri) is now still does not teach the ring feature, thus Jaisingh is being applied to Cowan's system to help isolate the broken ring/connection between nodes by re-creating a new connection, thus give the ring network great flexibility, reliability, and ease of configuration and maintenance.

Second, Cowan discloses communication between base stations in cell radio link {fig.1}. Jaisingh disclose base station connected to a network and with other base station in ring configuration {figs.2b, 3}. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

B/. Applicant argued that Acampora is directed to a hydrid universal broadband using free-spaced optical links NOT radio link, thus combining Acampora to Cowan's system would not been obvious.

In response to applicant's argument that Acampora is directed to a hydrid universal broadband using free-spaced optical links NOT radio link, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

In response to applicant's argument that Acampora is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, Cowan taught communication between base stations and mobile stations in cellular system. And, Acampora teaches communications between base stations and mobile stations in cellular system (figs.1, 3). Thus, implement teaching of a mesh configuration from Camper (fig.2) to Cowan would have been obvious to an artisan provide efficient alternative transmission link of high quality incase the primary path between two sites (base stations) were congested or in a state of failure.

C/. Applicant argued that rejection to claim 38 in the previous office action is hindsight.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be

recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

D/. Applicant argued that claim 44 rejection is not proper because claim 44 was rejected with multiple prior art references.

In response to applicant's argument that claim 44 was being rejected by multiple prior art reference, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

Also, it would have been obvious to a skilled artisan to apply Vary's teaching to Cowan's system with the motivation being to improve transmission quality, secure speech transmission (by encryption), frequency economy, modularity of the radio network and cost reduction {Vary, page 4-21, section 5}.

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In

no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phuongchau Ba Nguyen whose telephone number is 703-305-0093. The examiner can normally be reached on Monday-Friday from 10:00 a.m. to 3:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on 703-308-6602. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4700.

STEVEN H.D NGUYEN
PRIMARY EXAMINER

Phuongchau Ba Nguyen
Examiner
Art Unit 2665

January 26, 2004